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IDENTIFICATION OF THE AMERICAN CYPRINODONTID FISH *HYDRARGIRA SWAMPINA* LACÉPÈDE

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Hydrargira with its single included species, *swampina*, was described from Carolina by Lacépède (1803:378–380, pl. 10, fig. 3, p. 321). *Hydrargira* was emended to *Hydrargyra* by Cloquet (1821:102–103) and by many subsequent authors, including Valenciennes (in Cuvier and Valenciennes, 1846: 203), Günther (1866:318), Jordan and Gilbert (1883:331), Garman (1895:96), and Jordan, Evermann, and Clark (1930: 175). Jordan and Evermann (1896:632) retained the original spelling. Most workers since Günther (1866) have placed *Hydrargira* in the synonymy of *Fundulus* Lacépède (1803:37–39) whose type-species, as designated by Jordan and Gilbert (1883:331), is *Fundulus mudfish* Lacépède (1803:37–39), a synonym of *Cobitis heteroclita* Linnaeus.

Hydrargira swampina Lacépède, type-species of *Hydrargira* by monotypy, has been considered a synonym of *Fundulus heteroclitus* (Linnaeus) by most workers, including Garman (1895:98), Jordan and Evermann (1896:641), Fowler (1916: 416), and Jordan, Evermann, and Clark (1930:75, although they also equated the name with *F. majalis* on the same page). Garman (1895:98) incorrectly regarded *F. majalis* as type-

species of *Hydrargira*. Valenciennes created confusion by first stating (1836:228) that Lacépède's description was of the young of one species and the figure of a different species, and later (in Cuvier and Valenciennes, 1846:203) by describing specimens from New Jersey under the name *Hydrargyra swampina*. Valenciennes' *H. swampina* was correctly synonymized with *Fundulus diaphanus* by Jordan and Evermann (1896:645). If the customary placement of *H. swampina* as a synonym of *F. heteroclitus* is correct, *Hydrargira* is a synonym of *Fundulus*. Otherwise, since it antedates other generic and subgeneric names in or closely associated with *Fundulus*, the name is available.

Recently, Griffith (1974:320) "for reasons of priority [has employed] *F. swampinus* (Lacépède) rather than *F. lineolatus* as used by Rivas (1966)." The only documentation is Griffith's unpublished thesis (1972 Yale Ph.D. Dissertation) in which he stated (p. 250): "The description and figure given by Lacépède are unquestionably of the nominal *F. lineolatus* rather than *F. heteroclitus* or *F. diaphanus* as indicated by recent synonymies." *Fundulus lineolatus* (Agassiz, 1854) is in the *F. notti* species group (Wiley and Hall, 1975) which is assigned by some workers to the genus or subgenus *Zygonectes*. Wiley and Hall (1975:1) noted Griffith's substitution and suggested that "a ruling by the International Commission [for suppression of *swampina* based on Article 23] may be in order." We recognize neither desirability nor need to carry this issue to the Commission.

Lacépède's description and illustration (loc. cit.) of *H. swampina* are poor, but they provide no apparent basis for identification with *F. lineolatus*. His description differs from *F. lineolatus* in that *swampina* has 15 pectoral fin rays whereas *lineolatus* has 11–14 (Brown, 1958); *swampina* has 11 dorsal rays contrasting with 7–8 in *lineolatus* (data corrected from Brown, 1958); *swampina* has 12 anal rays rather than 8–10 in *lineolatus* (data corrected from Brown, 1958); and *swampina* reaches about 100 mm in length as against 80 mm in total length in *lineolatus*, which rarely exceeds 55 mm in standard length (based on large specimens from White Lake, North Carolina, in the Museum of Zoology, University of Michigan).

Lacépède's well-pigmented figure differs from *F. lineolatus* in that *swampina* has no subocular teardrop whereas *lineolatus* has one; *swampina* lacks the distinctive flank stripes of female *lineolatus*; *swampina* lacks rows of dots on the side, characteristic of male *lineolatus*; the vertical bars of *swampina* (14 shown in Lacépède's figure) are not distinctly thickened as they are in male *lineolatus*; the dorsal fin originates in front of rather than behind the origin of the anal fin as in *lineolatus*; and the body of *swampina* is more robust than the slender *lineolatus*.

Based on these differences, we reject identification of *Hydrargira swampina* Lacépède with *Fundulus lineolatus* (Agassiz). The identity of *H. swampina* Lacépède depends solely on the original description and figure because Lacépède based his description on manuscript notes given to him by Bosc and apparently deposited no types (pers. comm. from M. Martine Desoutter, Museum National d'Histoire Naturelle, Paris).

There are three other species of Carolina *Fundulus* which need be considered: *F. majalis*, *F. diaphanus*, and *F. heteroclitus*. *Fundulus majalis* can be eliminated because it typically has 12–14, usually 13, dorsal fin rays whereas *swampina* has 11, and Lacépède's figure shows neither the distinctive dorsal fin spot of male *majalis* nor the prominent horizontal body stripes of the female. *Fundulus diaphanus* (and its synonym *H. swampina* Valenciennes, 1846) can be eliminated because it has 12–15 dorsal rays rather than 11, and it usually has a higher number of pectoral rays (15) 16–17 in *diaphanus*; 15 in *swampina*. *Fundulus heteroclitus* generally agrees with Lacépède's meristic and color description. The configuration and height of the fins as shown in Lacépède's figure are not accurate for any Carolina species, but the shape and position of the anal fin better represent female *heteroclitus* than male *majalis* or male *diaphanus*. Finally, Lacépède's account of abundance and habitat support the identification of *swampina* with *heteroclitus*. We conclude that there is compelling evidence for the retention of *Hydrargira swampina* in the synonymy of *F. heteroclitus* and that *Hydrargira* is a synonym of *Fundulus*.

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